

# Acquisition Notice Posting

Headquarters Acquisition Division

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## FRANKLIN SMALL SATELLITE SUBSYSTEM TECHNOLOGIES PROGRAM AND EDISON SMALL SATELLITE DEMONSTRATION MISSIONS PROGRAM

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### General Information

Solicitation Number:	NNH10CC002L
Reference Number:	N/A
NAIS Posted Date:	May 25, 2010
FedBizOpps Posted Date:	May 25, 2010
Response Date:	June 30, 2010
Recovery and Reinvestment Act Action?:	NO
Classification Code:	A -- Research and Development
NAICS Code:	541712 - Research and Development in the Physical, Engineering, and Life Sciences (except Biotechnology)
Set-Aside Code:	N/A
Internet Address:	<a href="http://prod.nais.nasa.gov/cgi-bin/eps/bizops.cgi?gr=D&amp;pin=04#141538">http://prod.nais.nasa.gov/cgi-bin/eps/bizops.cgi?gr=D&amp;pin=04#141538</a>

### Office Address

NASA/Goddard Space Flight Center, NASA Headquarters Acquisition Branch, Code 210.H, Greenbelt, MD 20771

### Description

In Fiscal Year 2011, NASA plans to begin two programs for small satellites. The primary goal of the Franklin Small Satellite Subsystem Technology and the Edison Small Satellite Demonstration programs will be to advance small satellite technologies. To support program formulation, the NASA Office of the Chief Technologist (OCT) seeks candidate

small satellite subsystem technology developments and system demonstration missions that provide transformational advancements in small satellite capabilities and/or the ability to meet specific NASA science and technology objectives through small satellite efforts. The OCT will mature technologies that are of benefit to multiple customers from ground testing through flight and mission infusion. The small satellite subsystem technology and demonstration programs will develop and operate a series of focused small satellite technology development projects from Technology Readiness Levels (TRL) of 3 to 5 through ground testing and from TRL 5 to 7 through small satellite flight demonstration missions. A TRL description table is provided in an attachment. The objective of this RFI is to identify innovative small satellite subsystem and system technologies that can develop into transformational capabilities for the government and commercial sectors.

#### Franklin Small Satellite Subsystem Technologies Program

Technologies that enable small satellites to provide game changing capabilities for the government and commercial sectors will be supported under a competed Small Satellite Subsystem Technologies Program. In this program, ground testing of promising transformational small satellite capabilities are sought. The selected small satellite subsystem technology development projects will provide subsystem advances for the Edison Small Satellite Demonstration Program and other small satellite demonstration opportunities.

In the Small Satellite Subsystems Technology Program, ground testing of promising transformational small satellite capabilities will be conceived and developed to a maturity level suitable for flight demonstration. "Push" technologies may include formation flying, long life power systems, precision pointing, deployable apertures, autonomous swarm operations, miniaturized payload instrumentation, multifunctional systems, plug-and-play systems, advanced thermal management systems, heat- and radiation-tolerant electronics, propellantless or highly efficient propulsion, and other technology enablers. Architectures, proximity operations, robotics, space-to-space power transmission and other system interoperability will also be considered for TRL advancement from 3 to 4/5.

#### Edison Small Satellite Demonstration Missions

The Edison Small Satellite Demonstration Missions program will develop and operate a series of NASA-focused small satellite demonstration missions. These competitively selected missions are expected to provide technology focused demonstrations such as formation flying, payload recovery, orbital debris removal, autonomous/collaborative/close proximity operations, advanced power systems (long life or space-to-space transmission), advanced propulsion, miniaturized remote sensors, deployable apertures, autonomous swarm, robotics, and interoperable systems. These missions could also provide targets of opportunity on small satellites for peer-reviewed science objectives as a secondary goal.

Through NASA-university collaborative efforts, university students will gain hands-on

experience within project activities. In addition, this program seeks to serve the small satellite community by improving the affordability of small payload launch through secondary payload process improvements and other development efforts. NASA will pursue these missions in collaboration with academia and small business in close coordination with relevant successful programs under development at the Air Force Research Laboratory and the Operationally Responsive Space Office.

#### Instructions to Responders

This is not a request for proposal, quotation, or invitation for bid notice and is intended for information and planning purposes only. NASA does not intend to award a contract on the basis of this RFI. However, NASA may consider issuing a formal solicitation at a later date. NASA will not provide reimbursement for costs incurred in responding to this RFI. Respondents are advised that NASA is under no obligation to acknowledge receipt of the information received or provide feedback to respondents with respect to any information submitted under this RFI. NASA may contact respondents to this RFI to seek clarifications or additional information. Responses to this RFI do not bind NASA to any further actions related to this topic. Any future steps taken to award Broad Agency Announcements (BAA), Request for Proposals (RFP) or Space Act Agreements (SAA), Requests for Proposals (RFP) or Announcements of Opportunities (AO) will be contingent upon availability of funds.

This announcement contains all information required to submit a response. No additional forms, kits, or other materials are needed.

NASA appreciates responses from all sources including, but not limited to universities, university affiliated research centers, federally-funded research and development centers, private or public companies, and government research laboratories.

Oral communications are not acceptable in response to this notice.

NASA will not consider material that is marked classified or proprietary. NASA reserves the right to use responses to develop future solicitations and other types of public correspondence. However, NASA does not intend to release any individual RFI responses and will hold them confidential.

Submissions have the following formatting requirements: Microsoft Word formatted documents of 2 pages or less.

RFI responses should address these five areas, as a minimum:

- **Impact/Payoff:** What is the impact/payoff of this small satellite technology development or demonstration concept to NASA and to the aerospace community? What capability will result from this technology that does not exist now? What missions might be enabled that cannot be executed with existing technology? Provide supporting references.
- **Technology Readiness:** Provide information on the current technology readiness level (TRL) and the roadmap to flight and supporting references.

- Technology Development Approach: Describe your technology development approach to advance the TRL from its current level to the next levels. What ground facilities would be required? What is the overall testing required? If or when ready for flight, what is the preferred flight platform for this small satellite technology demonstration concept? Platforms include, but are not limited to, ISS, secondary payloads, sounding rockets, commercial suborbital launch vehicles.
- Potential Partnerships: Who are the possible cost sharing partners? Why are they interested in the development or flight demonstration of this technology?
- Risk: What are the primary risk factors involved in this technology development or flight demonstration? What risk factors will be retired with technology funding at its current TRL?
- Cost: Provide a rough order of magnitude of the cost range for the small satellite technology demonstration ideas.

Questions and comments may be forwarded via electronic transmission to [brant.l.sponberg@nasa.gov](mailto:brant.l.sponberg@nasa.gov) no later than midnight on 06/30/2010.

All responses to this RFI must arrive at this address by midnight on 6/30/10.

Mark all responses: RFI, Small Satellite

## **Point of Contact**

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